REMARKS

Claims 1, 3-11, and 13-20 are pending in the application. Claims 2 and 12 have been canceled. New claims 21 and 22 have been added.

Specification and Claims

Minor changes have been made to the specification to place it in better form for U.S. practice.

Further, minor changes have been made to the pending claims, without affecting the scope thereof, to place them in better form for U.S. practice.

Claim Rejections - 35 U.S.C. § 103

(a)   Claims 1-5, 7-13, and 15-20 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Otte (USP 6,314,413). This rejection is respectfully traversed.

In a general method of creating a Self-Organizing Map (SOM), various kinds of data can be used for SOM training. Raw data, unprocessed, untouched, and directly detected by sensors, is particularly preferable because SOM should reflect an entire condition of parameters as they are. Data processed by arithmetic processing unit, which is not raw data, is usually avoided for SOM training.

Therefore, contrary to the Examiner's assertion that the "differentiating" (which means transforming into its derivative) would have been obvious over Otte that teaches the determining of the values of "n process variables," which represent that state of the pant, at a particular time, one skilled in the art would not utilize "n values" obtained "by transforming the n parameter values into its derivative, including variation rates of the n parameter values," as recited in claim 1.

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Moreover, an off-line process, such as SOM training, is the most important step that determines the quality of the SOM (see page 31, lines 6-9 of the specification of the present application). Training data has a decisive influence on the SOM quality. Further, if sufficient varieties of parameters are not available, an inaccurate SOM might be created.

In contrast, the claimed invention of the present application refers not only to the "n parameter values," but also to the "n values," calculated by transforming the n parameter values into its derivative. In other words, the "Self-Organizing Map creating means" of the present invention has two functions as listed below:

(a)   Calculating derivative data ("n values") of detected data ("n parameter values"); and

(b)   Creating the SOM by using both the calculated derivative data and the detected data.

By this configuration, though the SOM in the present invention may have twice the data size as compared to a general SOM (see page 26, lines 15-17 of the specification), it is possible to grasp the tendency in the data trajectories so that a SOM with higher accuracy can be obtained (see page 7, lines 15-24 of the specification).

Otte, however, neither discloses or suggests creating "a Self-Organizing Map by using detection data, obtained on the basis of the multiple combinations of both n parameter values and parameter values detected by said detecting means, as learning data," as recited in claim 1.

In view of this, Applicants submit that one skilled in the art would not have conceived the claimed invention of the present application based on the Otte reference.

Claims 3-5 and 7-10, variously dependent on claim 1, are allowable at least for its dependency on claim 1.

Claim 2 has been canceled.

Claim 11 is allowable at least for the similar reasons as stated in the foregoing with regard to claim 1.

Claims 13 and 15-20, variously dependent on claim 11, are allowable at least for their dependency on claim 11.

Claim 12 has been canceled.

The Examiner is respectfully requested to reconsider and withdraw this rejection.

(b)   Claims 6 and 14 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Otte in view of Ye et al. (USP 6,477,469). This rejection is respectfully traversed.

Claim 6, indirectly dependent on claim 1, is allowable at least for its dependency on claim 1.

Claim 14, indirectly dependent on claim 11, is allowable at least for its dependency on claim 11.

The Examiner is respectfully requested to reconsider and withdraw this rejection.

New Claims

Claim 21, dependent on claim 1, is allowable at least for its dependency on claim 1.

Claim 22, dependent on claim 11, is allowable at least for its dependency on claim 11.

Support for these claims is in page 25, line 21 - page 26, line 2 of the specification.

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A favorable determination by the Examiner and allowance of these claims is earnestly
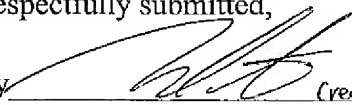
solicited.

Conclusion

Accordingly, in view of the above amendments and remarks, reconsideration of the

rejections and objections, and allowance of the pending claims are earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present

application, the Examiner is respectfully requested to contact Maki Hatsumi Reg. No. 40,417 at

the telephone number of the undersigned below, to conduct an interview in an effort to expedite

prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies

to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional

fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

Dated: December 12, 2007

Respectfully submitted,

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